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... amount of the server bandwidth each site can **utilize**. ... process is called a hash, or **message** digest. ... across proxy servers and other firewall **applications** and is ...  
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... That is, for a client to **utilize** a method on ... client **application** to invoke a **service** of a server **application**. ... Recall that SOAP is the **message** protocol used for ...  
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### CodeGuru: Accessing Directory Services

... These classes **utilize** the Active **Directory Services** ... Exception exception ) { Console.WriteLine( exception.**Message** ); } ... Architect of .NET **applications** for large ...  
[www.codeguru.com/Csharp/Csharp/cs\\_network/directoryservices/article.php/c6021/](http://www.codeguru.com/Csharp/Csharp/cs_network/directoryservices/article.php/c6021/) - 48k - [Cached](#) - [Similar pages](#)

### Internet Information Server 4.0

... the "Configuring Home **Directory** and **Applications**" section earlier ... A warning **message** reminds you that this ... per-file basis, and they **utilize** property sheets ...  
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### About Building Distributed Applications

... as hashing, random number generation, **message** authentication, and ... to help you create .NET **applications** that interact ... managed classes that **utilize** COM+ **services** ...  
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### Accessing Directory Services

... as security credentials and **application** preferences. ... These classes **utilize** the Active **Directory Services** ... Exception("User not authenticated: " + ex.**Message**); } ...  
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**2** [A uniform interface to networked library services](#)

Mitchell Blumenfeld, Ralph Droms

April 1992 **Proceedings of the 1992 ACM/SIGAPP Symposium on Applied computing: technological challenges of the 1990's**

Full text available: [pdf\(606.35 KB\)](#)

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**3** [Nomenclator descriptive query optimization for large X.500 environments](#)

Joann J. Ordille, Barton P. Miller

August 1991 **ACM SIGCOMM Computer Communication Review , Proceedings of the conference on Communications architecture & protocols**, Volume 21 Issue 4

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**4** [Discovering shared interests using graph analysis](#)

Michael F. Schwartz, David C. M. Wood

August 1993 **Communications of the ACM**, Volume 36 Issue 8

Full text available: [pdf\(4.01 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



**Keywords:** collaboration, directory service, dynamic organization, graph theory, interpersonal communications, resource directory, traffic analysis

**5** [Mobile networking in the Internet](#)

Charles E. Perkins



December 1998 **Mobile Networks and Applications**, Volume 3 Issue 4

Full text available:  [pdf\(166.90 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Computers capable of attaching to the Internet from many places are likely to grow in popularity until they dominate the population of the Internet. Consequently, protocol research has shifted into high gear to develop appropriate network protocols for supporting mobility. This introductory article attempts to outline some of the many promising and interesting research directions. The papers in this special issue indicate the diversity of viewpoints within the research community, and it is ...

## 6 Papers: A novel approach to mobility management

Ron Hutchins, Tracy Camp, Philip H. Enslow

January 1999 **ACM SIGCOMM Computer Communication Review**, Volume 29 Issue 1

Full text available:  [pdf\(1.11 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

In this paper, we propose a novel approach to computer mobility. Our approach allows mobility to be rapidly deployed, as the networking infrastructure required for deployment is available off the shelf. Furthermore, a mobile node does not require modifications in order to use these mobile services. While our approach provides rapid deployment and supports both IP and non-IP protocols, only a subset of mobile usage scenarios are offered. In other words, our approach does not solve all the problem ...

## 7 A survey of routing techniques for mobile communications networks

S. Ramanathan, Martha Steenstrup

October 1996 **Mobile Networks and Applications**, Volume 1 Issue 2

Full text available:  [pdf\(276.88 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Mobile wireless networks pose interesting challenges for routing system design. To produce feasible routes in a mobile wireless network, a routing system must be able to accommodate moving users, changing network topology, and fluctuating link quality. We discuss the impact of node mobility and wireless communication on routing system design, and we survey the set of techniques employed in or proposed for routing in mobile wireless networks.

## 8 Secure and mobile networking

Vipul Gupta, Gabriel Montenegro

December 1998 **Mobile Networks and Applications**, Volume 3 Issue 4

Full text available:  [pdf\(223.39 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The IETF Mobile IP protocol is a significant step towards enabling nomadic Internet users. It allows a mobile node to maintain and use the same IP address even as it changes its point of attachment to the Internet. Mobility implies higher security risks than static operation. Portable devices may be stolen or their traffic may, at times, pass through links with questionable security characteristics. Most commercial organizations use some combination of source-filtering routers, sophisticated ...

## 9 Uniform access to Internet directory services

D. Comer, R. E. Droms

August 1990 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM symposium on Communications architectures & protocols**, Volume 20 Issue 4

Full text available:  [pdf\(813.30 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

As networks and internetworks of computers expand in size and scope, discovery and

location of resources becomes a primary function of the networked computing environment. Static tables describing network resources have been replaced by dynamic directory services, such as X.500 and the Internet Domain Name System. These dynamic directory services provide more timely and accurate information about network resources than static tables. A wide variety of services address various com ...

#### 10 IP-based protocols for mobile internetworking

John Ioannidis, Dan Duchamp, Gerald Q. Maguire

August 1991 **ACM SIGCOMM Computer Communication Review , Proceedings of the conference on Communications architecture & protocols**, Volume 21 Issue 4

Full text available:  [pdf\(1.29 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



#### 11 A softbot-based interface to the Internet

Oren Etzioni, Daniel Weld

July 1994 **Communications of the ACM**, Volume 37 Issue 7

Full text available:  [pdf\(1.81 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



#### 12 Multidimensional access methods

Volker Gaede, Oliver Günther

June 1998 **ACM Computing Surveys (CSUR)**, Volume 30 Issue 2

Full text available:  [pdf\(1.05 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Search operations in databases require special support at the physical level. This is true for conventional databases as well as spatial databases, where typical search operations include the point query (find all objects that contain a given search point) and the region query (find all objects that overlap a given search region). More than ten years of spatial database research have resulted in a great variety of multidimensional access methods to support ...

**Keywords:** data structures, multidimensional access methods



#### 13 Comparison of access methods for time-evolving data

Betty Salzberg, Vassilis J. Tsotras

June 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 2

Full text available:  [pdf\(529.53 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper compares different indexing techniques proposed for supporting efficient access to temporal data. The comparison is based on a collection of important performance criteria, including the space consumed, update processing, and query time for representative queries. The comparison is based on worst-case analysis, hence no assumptions on data distribution or query frequencies are made. When a number of methods have the same asymptotic worst-case behavior, features in the methods tha ...

**Keywords:** I/O performance, access methods, structures, temporal databases



#### 14 Access pattern-based memory and connectivity architecture exploration

Peter Grun, Nikil Dutt, Alex Nicolau

February 2003 **ACM Transactions on Embedded Computing Systems (TECS)**, Volume 2 Issue



Full text available:  pdf(857.06 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Memory accesses represent a major bottleneck in embedded systems power and performance. Traditionally, designers tried to alleviate this problem by relying on a simple cache hierarchy, or a limited use of special purpose memory modules such as stream buffers. Although real-life applications contain a large number of memory references to a diverse set of data structures, a significant percentage of all memory accesses in the application are generated from a few memory instructions that exhibit pr ...

**Keywords:** Memory, access patterns, architecture exploration

## 15 Access control for large collections

H. M. Gladney

April 1997 **ACM Transactions on Information Systems (TOIS)**, Volume 15 Issue 2

Full text available:  pdf(482.88 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Efforts to place vast information resources at the fingertips of each individual in large user populations must be balanced by commensurate attention to information protection. For distributed systems with less-structured tasks, more-diversified information, and a heterogeneous user set, the computing system must administer enterprise-chosen access control policies. One kind of resource is a digital library that emulates massive collections of paper and other physical media for clerical, en ...

**Keywords:** access control, digital library, document, electronic library, information security

## 16 Query evaluation techniques for large databases

Goetz Graefe

June 1993 **ACM Computing Surveys (CSUR)**, Volume 25 Issue 2

Full text available:  pdf(9.37 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Database management systems will continue to manage large data volumes. Thus, efficient algorithms for accessing and manipulating large sets and sequences will be required to provide acceptable performance. The advent of object-oriented and extensible database systems will not solve this problem. On the contrary, modern data models exacerbate the problem: In order to manipulate large sets of complex objects as efficiently as today's database systems manipulate simple records, query-processi ...

**Keywords:** complex query evaluation plans, dynamic query evaluation plans, extensible database systems, iterators, object-oriented database systems, operator model of parallelization, parallel algorithms, relational database systems, set-matching algorithms, sort-hash duality

## 17 An overview of deterministic functional RAM chip testing

A. J. van de Goor, C. A. Verruijt

March 1990 **ACM Computing Surveys (CSUR)**, Volume 22 Issue 1

Full text available:  pdf(2.49 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)


This paper presents an overview of deterministic functional RAM chip testing. Instead of the traditional ad-hoc approach toward developing memory test algorithms, a hierarchy of functional faults and tests is presented, which is shown to cover all likely functional memory faults. This is done by presenting a novel way of categorizing the faults. All (possible) fault

combinations are discussed. Requirements are put forward under which conditions a fault combination can be detected. Finally, ...

### 18 Federated database systems for managing distributed, heterogeneous, and autonomous databases

Amit P. Sheth, James A. Larson

September 1990 **ACM Computing Surveys (CSUR)**, Volume 22 Issue 3

Full text available:  pdf(5.02 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

A federated database system (FDBS) is a collection of cooperating database systems that are autonomous and possibly heterogeneous. In this paper, we define a reference architecture for distributed database management systems from system and schema viewpoints and show how various FDBS architectures can be developed. We then define a methodology for developing one of the popular architectures of an FDBS. Finally, we discuss critical issues related to developing and operating an FDBS.

### 19 Access Control Models and Mechanisms: PBDM: a flexible delegation model in RBAC

Xinwen Zhang, Sejong Oh, Ravi Sandhu

June 2003 **Proceedings of the eighth ACM symposium on Access control models and technologies**

Full text available:  pdf(181.24 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Role-based access control (RBAC) is recognized as an efficient access control model for large organizations. Most organizations have some business rules related to access control policy. Delegation of authority is among these rules. RBDM0 and RDM2000 models are recently published models for role-based delegation. They deal with user-to-user delegation. The unit of delegation in them is a role. But in many cases users may want to delegate a piece of permission from a role. This paper proposes a f ...

**Keywords:** RBAC, access control, delegation

### 20 The design, implementation, and evaluation of Jade

Martin C. Rinard, Monica S. Lam

May 1998 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 20 Issue 3

Full text available:  pdf(576.88 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Jade is a portable, implicitly parallel language designed for exploiting task-level concurrency. Jade programmers start with a program written in a standard serial, imperative language, then use Jade constructs to declare how parts of the program access data. The Jade implementation uses this data access information to automatically extract the concurrency and map the application onto the machine at hand. The resulting parallel execution preserves the semantics of the original serial program ...

**Keywords:** parallel computing, parallel programming languages

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# **Understanding Unified Communications for Service Providers**

## **Session 2004**

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### **Agenda**

- **Introduction, Features, and Benefits**
- **Architecture and Components**
- **Typical Call Flows**
- **Deployment in a Service Provider Environment**

- **Redundancy and Load Balancing**

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## **Agenda**

- **Introduction, Features, and Benefits**
- **Architecture and Components**
- **Typical Call Flows**
- **Deployment in a Service Provider Environment**
- **Redundancy and Load Balancing**

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## **Unified Communications**

**Unified communications is an enhanced**

**voice over IP solution that provides the ability  
to manage voice mail, e-mail and fax under  
a common message store, on an existing  
IP infrastructure.**

**Voice**

**E-Mail**

**Unified  
Communications**

**Fax**

3934

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## **Unified Communications**

### **Multiple Device Types and Media**

**V F**

**Multiple Device Types and Media**

## **Non Real-time Message Exchange**

2003  
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Page 4

# **Unified Communications Features**

## **Voicemail**

- **Multiple personalized greeting**
- **Handle all messages with a single call**
- **Designate and prioritize messages**
- **Leave messages for multiple subscribers**
- **Forward Voice messages as e-mail attachments**
- **Locate subscribers using name or phone number**
- **Message waiting indication by pager, stutter dial tone or indicator light**

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# **Unified Communications Features**

## **E-Mail Messaging**

- **Ability to identify voice, e-mail and fax messages**

**in mailbox**

- **Play voice messages as streaming audio**
- **Listen to e-mail messages over the phone using text to speech processing (TTS)**
- **Respond to an e-mail message over the phone as an audio attachment to the original sender**
- **Message waiting indication on arrival of new e-mail messages**
- **Print e-mail to a local fax machine**

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## **Unified Communications Features**

### **Fax Messaging**

- **Ability to redirect fax messages to a local fax machine when ready**
- **Determine the time of arrival and sender of a fax message using a telephone**
- **View faxes as a (.tiff) attachment to an e-mail message**
- **Forward faxes as e-mail attachments to other users**
- **Message waiting indication on arrival of new fax messages**

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## **Unified Communications Features**

### **Single Number Reach**

- **Callers can dial one number to reach user at work, home or on mobile phone**
- **Callers can choose to locate subscribers or leave a message**
- **Subscribers can choose to accept the call based on the caller or transfer to voice mail**
- **Users can define different reach numbers based on the time of the call**
- **Users can choose to be notified of incoming calls**

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**Page 6**

## **Service Provider Benefits**

- **Brand services for greater recognition**
- **Drive minutes of use on the network,**

## **increasing total revenue per subscriber**

- **Reduce churn by strengthening customer relationships with value added services**
- **Reduce cost of ownership by utilizing a common platform to introduce new applications and services**

2004

1295\_04\_2004\_12

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## **End User Benefits**

- **Users can manage and access all of their messages regardless of the media type**
- **Remote users can access all of their messages with one phone call into their unified messaging system**
- **Voice mail, e-mail, and fax messaging are non-real-time means of communications, allowing users to access their messages at any time**
- **Media conversion allows users to access their messages in the media of their choice**

2004

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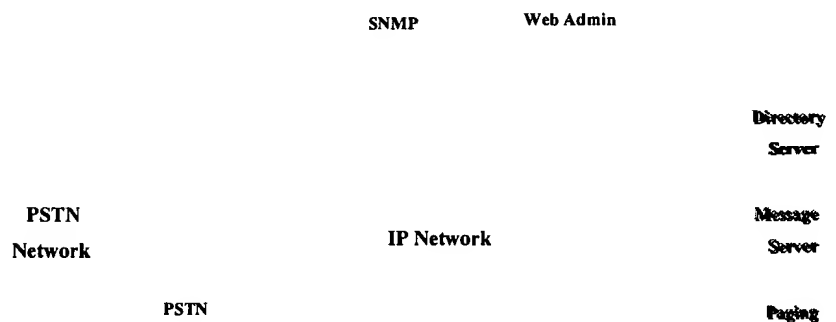
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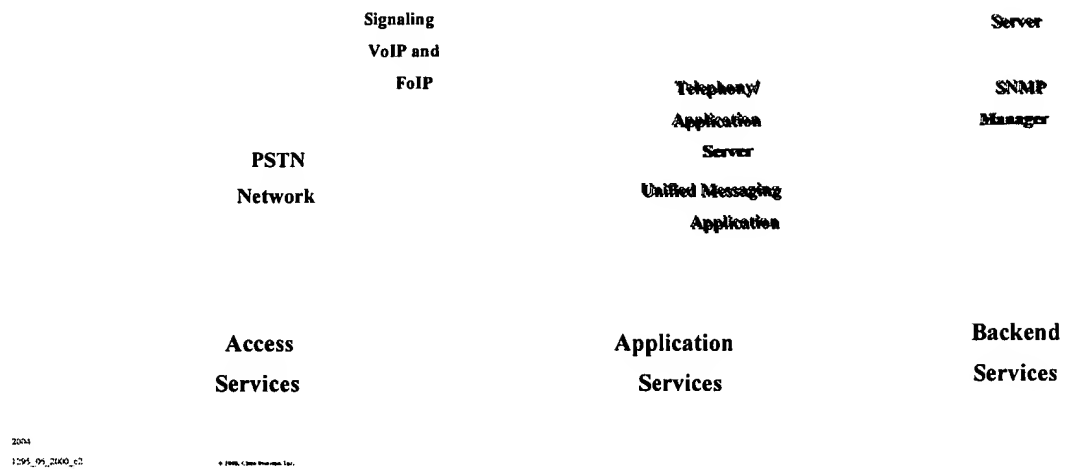
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- Typical Call Flows
- Deployment in a Service Provider Environment
- Redundancy and Load Balancing

3934  
1225\_05\_2009\_02

## Unified Communications Network Components







## Network Components

### Access Services

- **Edge devices that provide telephony and data access to the network**

**Cisco AS5300/5800 with Cisco IOS 12.0.5(T2) and vew-vfc-mz.c542.4.04 as VoIP H.323 gateways which provide access to the network from traditional telephony devices**

**Cisco AS5300 Onramp and Offramp fax gateways that provide access to and from the network for group three fax machines**

**Access servers for dial in data access from PC's**

# **Network components**

## **Application Services**

- **Message management logic and H.323  
call termination point**

- **Gateserver**

**Sun Netra T 1125 Dual processor, 300 MHz, 512MB RAM,  
9.1G hard drive with Solaris 2.6**

**uOne gateserver software version 4.2S**

**RadVision rel 2.1.2.3 H.323 Stack (Included with uOne)**

**L&H Telecom TTS (Text to Speech) V.100 for**


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... In Proc. 10th Nat. Conf. on AI, 96-103. **Droms**, R. 1990. **Access to Heterogeneous**  
 Directory Services. ... Technical Re- port 93-09-01, University of Washington. ...

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... The communication in this **heterogeneous** environment can be categorized ... the MN's  
 home agent **re**-addresses the ... is used for routing from the **access** router to ...

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[# NEMO WG - 59th IETF Seoul - Monday 1st March 2004 9.00 AM ...](#)

... of the working group meeting was **re**-organized since this ... [www.ietf.org/internet-drafts/draft-droms-nemo-dhcpv6](#) ... Router

June 03 - draft-ng-nemo-**access**-router-option ...

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... host configuration protocol (context) - **Droms** - 1993 123 End ... tool (context) - Jacobson  
 14 **Re**-engineering the ... 1997 14 Lightweight directory **access** protocol (v3 ...

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... Once the MH is out of coverage of its current **access** point and ... Since we have configured  
 the mobile host to send a **re**-INVITE when a ... 3] R. **Droms**, "Dynamic Host ...

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## Publications

... M. Annamalai and B. Bhargava. Defining Data Equivalence for Efficient **Access** of Images  
 in a Distributed Environment. ... CD-ROM by Ralph **Droms**. WR Dyksen. ... **RE** Lynch. ...

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... Restricted to other programme participants (including the Commission), **RE** - Restricted  
 to ... investigates the major issues relating to IPv6 **access** over wireless ...

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... 24 instead of the Reassociation Request will result in a **re**-authentication, potentially disrupting connectivity. 25 Page 8. IEEE Inter-**Access** Point Protocol P802 ...  
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... management, before sending the SIP **re**-INVITE message ... MH attaches to the GPRS radio **access** of a ... Now, mobility in such a **heterogeneous** networking environment can ...  
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2	1	6708170.pn. and (retrie\$9)	USPAT	2004/06/07 14:15
3	0	(messag\$5 adj server\$5) and (ldap adj server\$3) and ((email e-mail) adj server\$3) and (distribut\$5 adj (database\$3 director\$5 ))	USPAT	2004/06/07 11:36
4	39	(messag\$5 adj server\$5) and ((email e-mail) adj server\$3) and (distribut\$5 adj (database\$3 director\$5 ))	USPAT	2004/06/07 12:02
14	1	6484177.pn. and (quer\$5 search\$5)	USPAT	2004/06/07 13:18
15	1	6484177.pn. and ((quer\$5 search\$5) with (director\$5 server\$5 database\$5 repositor\$5))	USPAT	2004/06/07 13:41
16	1	6708170.pn. and (e-mail email messag\$6)	USPAT	2004/06/07 13:41
17	40	snpp	USPAT	2004/06/07 13:35
18	0	6708170.pn. and (api)	USPAT	2004/06/07 14:30
19	1	6484177.pn. and (api paging pager\$3 snpp)	USPAT	2004/06/07 13:50
20	4	simple adj network adj pag\$3 adj protocol	USPAT	2004/06/07 13:45
21	76	paging adj server\$3	USPAT	2004/06/07 13:46
29	1	6708170.pn. and (medium rom floppy disk memory )	USPAT	2004/06/07 14:57
30	1	6708170.pn. and (code\$3 instruction\$5 program\$3 )	USPAT	2004/06/07 14:44
31	1	("6484177" "6708170").pn. and (metadata meta )	USPAT	2004/06/07 14:46
32	177	(metadata with (monitor\$5 track\$5 trace\$5))	USPAT	2004/06/07 14:58
-	13191	(unif\$9 near3 (messag\$5 application\$5))	USPAT	2004/06/03 13:55
-	566	(lightweight near directory near access) ldap	USPAT	2004/06/03 13:56
-	77	((unif\$9 near3 (messag\$5 application\$5))) and ((lightweight near directory near access) ldap)	USPAT	2004/06/03 13:56
-	47	((unif\$9 near3 (messag\$5 application\$5))) and ((lightweight near directory near access) ldap)) and (707/\$ 709/\$).ccls.	USPAT	2004/06/03 13:58
-	36	((unif\$9 near3 (messag\$5 application\$5))) and ((lightweight near directory near access) ldap)) and (707/\$ 709/\$).ccls. and map\$5	USPAT	2004/06/03 14:03
-	54	((unif\$9 near3 (messag\$5 application\$5))) and ((lightweight near directory near access) ldap)) and map\$5	USPAT	2004/06/03 14:12
-	15	(differen\$5 near (director\$5 near service\$5))	USPAT	2004/06/03 14:16
-	22	(differen\$5 heterogen\$9) near (director\$5 near service\$5)	USPAT	2004/06/03 17:05
-	1	("6154743").PN.	USPAT	2004/06/03 14:20
-	9	6154743.uref.	USPAT	2004/06/03 14:21
-	2	( (differen\$5 heterogen\$9) near (director\$5 near service\$5) ) and 6154743.uref.	USPAT	2004/06/03 14:21
-	75	central\$5 near3 director\$5 near3 service\$5	USPAT	2004/06/04 10:40
-	65	(central\$5 near3 director\$5 near3 service\$5) and (unif\$9 single\$5)	USPAT	2004/06/03 17:06
-	50	(central\$5 near3 director\$5 near3 service\$5) and (map\$5 table\$5)	USPAT	2004/06/03 17:07
-	62	(central\$5 near3 director\$5 near3 service\$5) and (map\$5 table\$5 attribut\$5)	USPAT	2004/06/03 17:07
-	41	(central\$5 shar\$5) near director\$5 near (server\$5 service\$5)	USPAT	2004/06/03 17:13
-	1	(central\$5 shar\$5) near director\$5 near (server\$5 service\$5) and (global\$5 near unique\$5 near identifier\$5)	USPAT	2004/06/03 17:32
-	58	( director\$5 near3 (server\$5 service\$5)) and (global\$5 near unique\$5 near identifier\$5)	USPAT	2004/06/03 17:31
-	14	(central\$5 shar\$5) near2 director\$5 near2 (server\$5 service\$5) and (global\$5 near2 (unique\$5 identifier\$5))	USPAT	2004/06/03 17:32
-	56	central\$5 near3 director\$5 near3 server\$5	USPAT	2004/06/04 10:51

-	73	(heterogeneous differe\$6 plurality) near2 director\$5 near2 server\$5	USPAT	2004/06/04 12:22
-	4	((("20020010781") or ("6421716") or ("6263377") or ("5499343"))).PN.	USPAT; US-PGPUB	2004/06/04 11:44
-	1	6564370.pn. and (messag\$5 netscape\$5 lotus e-mail\$5)	USPAT	2004/06/04 11:45
-	1	6564370.pn. and (messag\$5 netscape\$5 lotus web e-mail\$5)	USPAT	2004/06/04 11:45
-	1	("6714930" "6360230").pn. and (messag\$5 netscape\$5 lotus web e-mail\$5)	USPAT	2004/06/04 11:46
-	2	("6714930" "6360230").pn. and (server\$5)	USPAT	2004/06/04 11:54
-	1	("6665674").pn. and (attribut\$5 table\$5 map\$6)	USPAT	2004/06/04 11:54
-	1	("6665674").pn. and (attribut\$5 request\$6 search\$5 match\$6)	USPAT	2004/06/04 11:55
-	1	("6665674").pn. and (attribut\$5 vendor\$5 search\$5 match\$6)	USPAT	2004/06/04 11:56
-	0	("6665674").pn. and ( search\$5 )	USPAT	2004/06/04 12:12
-	1	(multi adj vendor\$5) near director\$5 near server\$5	USPAT	2004/06/04 12:13
-	3	(heterogeneous ) near2 director\$5 near2 server\$5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/06/04 12:23
-	18	(heterogeneous ) near director\$5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/06/04 13:07
-	15	(web with (email e-mail messag\$5 )) with (director\$5 adj (service\$5 server\$5))	USPAT	2004/06/04 13:17
-	14	ldap adj attribut\$5	USPAT	2004/06/04 13:20
-	0	(ldap near director\$5) and (smtp near director\$5) and (snpp near director\$5)	USPAT	2004/06/04 13:20
-	0	(ldap near6 director\$5) and (smtp near6 director\$5) and (snpp near6 director\$5)	USPAT	2004/06/04 13:21
-	3	(ldap near6 director\$5) and (smtp near6 director\$5)	USPAT	2004/06/04 13:21
-	2025	network adj application	USPAT	2004/06/04 13:44
-	67	(network adj application) with (web email e-mail)	USPAT	2004/06/04 13:47
-	0	unif\$5 adj communication adj application	USPAT	2004/06/04 13:47
-	60	unified\$5 adj (application communication )	USPAT	2004/06/04 13:49